

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for georeferencing a raster map, comprising:
 - displaying a first map and a second map, the first map being a digital raster map, having a plurality of pixel locations, and the second map being a previously georeferenced map, having associated geographic coordinates, wherein the first map is similar to the second map, each pixel location includes an associated x-coordinate and y-coordinate, and each geographic coordinate includes an associated longitude coordinate and an associated latitude coordinate;
 - receiving an entry identifying a first point pair, wherein a first pixel location on the first map is associated with a first geographic coordinate on the second map and the first pixel location is located at a position on the first map analogous to the first geographic coordinate on the second map;
 - receiving an entry identifying a second point pair, wherein a second pixel location on the first map is associated with a second geographic coordinate on the second map and the second pixel location is located at a position on the first map analogous to the second geographic coordinate on the second map;
 - assigning to the first pixel location the longitude coordinate and the latitude coordinate associated with the first geographic coordinate;

assigning to the second pixel location the longitude coordinate and the latitude coordinate associated with the second geographic coordinate;

creating a mathematical georeferencing function, based on the first point pair and the second point pair, for assigning ~~appropriate~~ corresponding geographic coordinates to any one of the plurality of pixel locations; and

revising the mathematical georeferencing function when a new point pair is received.

2. (Original) The method of claim 1 wherein the second map is a vector map.

3. (Original) The method of claim 1 wherein the second map is a digital raster map.

4. (Previously Presented) The method of claim 1 wherein the point on the first map has a previously determined longitude and latitude.

5. (Canceled)

6. (Previously Presented) The method of claim 1 wherein the georeferencing function is a linear transformation.

7. (Original) The method of claim 1 further comprising selectively synchronizing, responsive to a user command, the first map and the second map.
8. (Original) The method of claim 1 further comprising receiving a mark on the first map at a location, and reproducing the mark on the second map at a corresponding location.
9. (Previously Presented) The method of claim 1 wherein the georeferencing uses at least three point pairs to complete the georeferencing function for the first map based on a linear transformation.
10. (Previously Presented) The method of claim 1 further comprising using at least four point pairs to complete the georeferencing function for the first map, based on a linear transformation, and further comprising executing a validation check.
11. (Previously Presented) The method of claim 10 further comprising rejecting one of the point pairs when an error associated with the one point pair deviates a pre-determined amount from a standard error computed using the other point pairs.
12. (Previously Presented) The method of claim 11 wherein the standard error uses a "least square" parameter fitting operation.
13. (Previously Presented) The method of claim 1 further comprising:

receiving a selection of a point on the first map, and
receiving a selection of a point on the second map.

14. (Currently Amended) An apparatus for georeferencing a raster map,
the apparatus comprising:

means for displaying a first map and a second map, the first map being a digital raster map, having a plurality of pixel locations, and the second map being a previously georeferenced map, having associated geographic coordinates, wherein the first map is similar to the second map, each pixel location includes an associated x-coordinate and y-coordinate, and each geographic coordinate includes an associated longitude coordinate and an associated latitude coordinate;

means for receiving an entry identifying a first point pair, wherein a first pixel location on the first map is associated with a first geographic coordinate on the second map and the first pixel location is located at a position on the first map analogous to the first geographic coordinate on the second map;

means for receiving an entry identifying a second point pair, wherein a second pixel location on the first map is associated with a second geographic coordinate on the second map and the second pixel location is located at a position on the first map analogous to the second geographic coordinate on the second map;

means for assigning to the first pixel location the longitude coordinate and the latitude coordinate associated with the first geographic coordinate;

means for assigning to the second pixel location the longitude coordinate and the latitude coordinate associated with the second geographic coordinate;

means for creating a mathematical georeferencing function, based on the first point pair and the second point pair, to assign appropriate corresponding geographic coordinates to any one of the plurality of pixel locations; and

means for revising the mathematical georeferencing function when a new point pair is received.

15. (Canceled)

16. (Previously Presented) The apparatus of claim 14 further comprising means for receiving a mark on the first map at a location, and reproducing the mark on the second map at a corresponding location.

17. (Previously Presented) The apparatus of claim 14 further comprising means for using at least four point pairs to compute a georeferencing function for the first map based on a linear transformation, and further comprising executing a validation check.

18. (Previously Presented) The apparatus of claim 17 further comprising means for rejecting one of the point pairs when an error associated with the one point pair deviates a predetermined amount from a standard error computed using the other point pairs.

19. (Currently Amended) A computer readable medium containing instructions executable by a computer to perform a method to georeference a raster map, the method comprising:

displaying a first map and a second map, the first map being a digital raster map, having a plurality of pixel locations, and the second map being a previously georeferenced map, having associated geographic coordinates, wherein the first map is similar to the second map, each pixel location includes an associated x-coordinate and y-coordinate, and each geographic coordinate includes an associated longitude coordinate and an associated latitude coordinate;

receiving an entry identifying a first point pair, wherein a first pixel location on the first map is associated with a first geographic coordinate on the second map and the first pixel location is located at a position on the first map analogous to the first geographic coordinate on the second map;

receiving an entry identifying a second point pair, wherein a second pixel location on the first map is associated with a second geographic coordinate on the second map and the second pixel location is located at a position on the first map analogous to the second geographic coordinate on the second map;

assigning to the first pixel location the longitude coordinate and the latitude coordinate associated with the first geographic coordinate;

assigning to the second pixel location the longitude coordinate and the latitude coordinate associated with the second geographic coordinate;

creating a mathematical georeferencing function, based on the first point pair and the second point pair, for assigning ~~appropriate~~ corresponding geographic coordinates to any one of the plurality of pixel locations; and

revising the mathematical georeferencing function when a new point pair is received.

20. (Previously Presented) The computer-readable medium of claim 19 further comprising:

using at least four point pairs to compute a georeferencing function for the first map based on a linear transformation;

further comprising executing a validation check; and

rejecting one of the point pairs when an error associated with the one point pair deviates a predetermined amount from a standard error computed using the other point pairs.

21. (Previously Presented) The method of claim 9, wherein the point pairs used by the georeferencing are widely dispersed so that an accuracy of the georeferencing function is increased.

22. (Previously Presented) The method of claim 21, wherein the point pairs are widely dispersed when a polygon defined by vertices chosen among the point pairs covers a substantial portion of the first map.